APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/518,551	03/03/2000	Govindaraju Gnanasivam	A-66977/RMA/LM	5668

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EXAMINER
KING, JUSTIN

ART UNIT	PAPER NUMBER
2181	13

DATE MAILED: 07/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/518,551	Applicant(s) GNANASIVAM ET AL.
	Examiner Justin I. King	Art Unit 2181

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _05 May 2003_ .

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-27_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-27_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on _3/3/00_ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1.   The drawings are objected to under 37 CFR 1.83(a). The drawings must show every

feature of the invention specified in the claims. Therefore, the claim 22's amended limitations

and claims 25 and 27's limitations must be shown or the feature(s) canceled from the claim(s).

No new matter should be entered. A proposed drawing correction or corrected drawings

are required in reply to the Office action to avoid abandonment of the application. The objection

to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making
> and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it
> pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode
> contemplated by the inventor of carrying out his invention.

3.   Claim 27 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the

written description requirement. The claim(s) contains subject matter, which was not described

in the specification in such a way as to reasonably convey to one skilled in the relevant art that

the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claim 27's combined limitation "said logical I/O device is selected from a plurality of

logical I/O devices, each of said plurality of logical I/O devices coupled with at least one

common physical I/O device, and said reservation request is executed by said second controller

to reserve said logical 1/O device without reserving said at least one common physical 1/O

device" is not found in the specification or the drawing.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5.   Claims 21 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Judd et al.

(U.S. Patent No. 5,768,623).

Referring to claim 21: Judd discloses an apparatus (figure 7) for managing access to an

logic input/output device (figure 7, structures 92-97), a communications link (figure 7, structure

98) coupling first and second nodes (figure 7, structure 80-85) each having respective first and

second bus controllers. Judd further discloses an input logic on said first controller receiving a

request to reserve said input/output device, and communications logic communicating from said

first controller to said second controller a reservation request for said input/output device for

execution by said second controller (column 4, paragraph 3, lines 52-53). Hence, the claim 21 is

anticipated by Judd.

Referring to claim 23: Judd discloses a bus (figure 7, structure 98, column 4, lines 52-54).

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

7.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

> 1.   Determining the scope and contents of the prior art.
> 2.   Ascertaining the differences between the prior art and the claims at issue.
> 3.   Resolving the level of ordinary skill in the pertinent art.
> 4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

8.   Claims 1-3 and 5-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Judd

in view of Hammersley et al. (U.S. Patent No. 5,392,433).

Referring to claims 1-2: Judd discloses a first node and a second node, having respective

first and second bus controllers, and a logical I/O device, and a bus (figure 7). Judd discloses

receiving on said first controller a request to reserve said logical 1/O device; and communicating

by means of said bus from said first to said second controller a request for said logical 1/O

device for execution by said second controller, in response to said receiving (column 4,

paragraph 3, lines 52-54).

Judd does not explicitly disclose the request is a reservation request. Hammersley

teaches a reservation request on a shared resource (figures 5A1-2, 5B). Hence, it would have

been obvious to one having ordinary skill in the computer art to adopt Hammersley's teaching to

Judd because Hammersley enables one to reserve one particular shared resource for exclusive

usage.

Referring to claim 3: Judd discloses the determining whether said logical 1/O device is

already reserved within said second controller (column 4, paragraph 3), but Judd does not

explicitly discloses the communicating a response, indicating failure to reserve said logical 1/O

device, to said first node when said logical 1/O device is already reserved; and Judd does not

disclose the reserving said logical 1/O device for said first node within said second controller,

and communicating to said first node a response indicating success in reserving said logical 1/O

device.

Hammersley teaches the failure response due to the unavailability and the confirmation

on successful reservation (figures 5A1-2, 5B). Hence, it would have been obvious to one having

ordinary skill in the computer art to adopt Hammersley's teaching to Judd because Hammersley

enables one to acknowledge the reservation request's status.

Referring to claim 5: Judd discloses a multi-logical-device and third controller (figures 7-

8).

Referring to claim 6: Claim 6 is rejected as the claims 3-4's arguments stated above.

Referring to claim 7: Claim 7 is rejected as the claim 1's argument stated above;

furthermore, Judd discloses the firmware (column 5, paragraph 2), the firmware and its

associated hardware are equivalent to the computer-readable medium for data storage and its

associated computer program including instructions.

Referring to claim 8: Claim 8 is rejected as the claim 2's argument stated above.

Referring to claim 9: Claim 9 is rejected as the claim 3's argument stated above.

Referring to claim 10: Claim 10 is rejected as the claim 6's argument stated above.

Referring to claim 11: Claim 11 is rejected as the claim 7's computer readable medium's argument stated above; furthermore, Judd discloses a computer system with an 1/O device, a first and a second nodes having respective first and second bus controllers, and a bus coupling said first and second nodes and the 1/O device by means of said first and second controllers (figure 7). Judd's firmware's associated hardware for executing the firmware instruction is equivalent to the claimed CPU.

Referring to claims 12 and 14: Judd discloses a first node and a second node, having respective first and second bus controllers, and a logical I/O device, and a bus (figure 7). Judd discloses receiving on said first controller a request to reserve said logical 1/O device; and communicating by means of said bus from said first to said second controller a request for said logical 1/O device for execution by said second controller, in response to said receiving (column 4, paragraph 3, lines 52-54).

Judd does not explicitly disclose the request is a release request. Hammersley teaches a release request on a shared resource (figure 6). Hence, it would have been obvious to one having ordinary skill in the computer art to adopt Hammersley's teaching to Judd because Hammersley enables one to free up one particular shared resource from exclusive usage.

Referring to claim 13: Hammersley teaches the reservation requests (figures 5A1-2, figure B).

Referring to claim 15: Judd discloses a multi-logical-device and third controller (figures 7-8).

Referring to claims 16-17: Claims 16-17 are rejected as the claim 12's argument stated above; furthermore, Judd discloses the firmware (column 5, paragraph 2), the firmware and its associated hardware are equivalent to the computer-readable medium for data storage and its associated computer program including instructions.

Referring to claim 18: Claim 18 is rejected as the claim 16's computer readable medium's argument stated above; furthermore, Judd discloses a computer system with an 1/O device, a first and a second nodes having respective first and second bus controllers, and a bus coupling said first and second nodes and the 1/O device by means of said first and second controllers (figure 7). Judd's firmware's associated hardware for executing the firmware instruction is equivalent to the claimed CPU.

Referring to claim 19: Claim 19 is rejected as the claim 7's rejection stated above.

Referring to claim 20: Claim 20 is rejected as the claim 16's rejection stated above.

9.   Claims 22 and 25 are rejected under 35 U.S.C. 103(a) as being anticipated by the combination of the Judd and "Quick Guide to Partitioning A Hard Drive" by New Logic Computers.

Referring to claims 22 and 25: Judd's disclosure is stated in the 102 Rejection above; Judd does not explicitly disclose the logical I/O device is selected from a plurality of logical I/O devices coupled with a physical I/O device. The New Logic Computers demonstrates that the well-known FDISK program can partition one physical I/O device into several logical I/O devices. Hence, it would have been obvious to one with ordinary skill in the computer art at the

time Applicant made the invention to use FDISK program to partition one hard drive to several

logical drives for a better hard drive space management and personal preference.

10.   Claims 24 are rejected under 35 U.S.C. 103(a) as being anticipated by the combination of

the Judd and "What is RAID" by Mike Neuffer.

Referring to claim 24: Judd's disclosure is stated in the 102 Rejection above; Judd does

not explicitly disclose the logical I/O device is stored on a plurality of physical I/O devices.

Neuffer teaches that the RAID, as a common practice, strips/concatenates multiple drives into

one logical storage unit. Hence, it would have been obvious to one with ordinary skill in the

computer art at the time Applicant made the invention to use RAID to concatenate several hard

drives into one huge logical drive for an easier access to a huge storage space.

11.   Claims 26-27 are rejected under 35 U.S.C. 103(a) as being anticipated by the

combination of the Judd and Ofer et al. (U.S. Patent No. 6,209,059).

Referring to claim 26: Judd does not explicitly disclose that the reservation request does

not reserve the common physical device. Ofer discloses that it is known to reconfigure logic

device without taking the storage system off-line (abstract). The traditional off-line requirement

for reconfiguring logic device is the reserving the common physical device; thus, Ofer discloses

that the reservation request does not reserve the common physical device. Hence, it would have

been obvious to one having ordinary skill in the art at the time Applicant made the invention to

adopt Ofer's teaching to Judd because Ofer enables to reconfigure logic device without suffering

from any system downtime.

Referring to claim 27: Claim 26's argument applies; furthermore, since each logical

device is managed as an independent unit, the reservation request is only accessing the portion of

the physical device that are designated to the logical device; hence, the reserve request will not

reserving the whole physical device.

12.   Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Judd in view of

Hammersley, and in further view of Barlow (U.S. Patent No. 4,096,569).

Judd discloses that a secondary controller aborts the access when the primary controller is

still functioning (column 8, lines 43-67); such that Judd discloses the aborting access when said

response indicates failure to reserve and said first controller is subordinate to said second

controller. Judd does not disclose the delaying and retrying.

Barlow discloses that the master will retry upon receiving the failure signal (column 7,

paragraph); such that Barlow discloses the delaying and the communicating again a reservation

request for said logical I/O device when said response indicates failure to reserve and said first

controller is dominant to said second controller. Therefore, it would have been obvious to one

having ordinary skill in the computer art to adopt the teachings of Barlow to Judd and

Hammersley because Barlow teaches one to handle the failure exceptions.

Response to Arguments

13.   In response to Applicant's arguments that Judd's SCSI reserve command is not capable of

managing access to a logical device, and it is only for physical device (Remark, page 11, 2nd

paragraph): In Applicant's specification's page 6's line 27 states that SCSI reserve command

does reserve the logic device. As Applicant states, the SCSI reserve command is a standard

SCSI function, there is no indication that Judd's SCSI command behaviors differently from the

standard SCSI protocols.

14.   In response to Applicant's arguments that claim 1 and 21 are directed to an apparatus for

managing access to a logical device, accordingly, the entire disk correspond with the logical

device are not necessary locked (Remark, page 11, paragraph 4's first 3 lines): The contended

non-exclusive locking feature/limitation is not claimed in claim 1 and 21.

15.   In response to Applicant's argument on the lack of motivation (Remark, page 12's last 2

lines, page 15's paragraph 5, page 28's first paragraph): In response to applicant's argument that

there is no suggestion to combine the references, the examiner recognizes that obviousness can

only be established by combining or modifying the teachings of the prior art to produce the

claimed invention where there is some teaching, suggestion, or motivation to do so found either

in the references themselves or in the knowledge generally available to one of ordinary skill in

the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958

F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, both Judd and Hammersley are

directing to managing the shared system resources. Judd focuses on the storage device, and the

Hammersley focuses on any shard computer resources including the storage device (abstract).

Hammersley enables one to enhance the performance over the lock granularity (column 1).

Barlow focuses on improving the priority logic for use in a data processing system in which a

plurality of units are coupled over a common bus (column 2, paragraph 2), and Barlow enables

one to enhance the performance of the common bus.

16.   In response to Applicant's argument that disk storage device does not equate the amended "logical I/O device" (Remark, page 13, paragraphs 5-6, page 14, bottom of the 2nd paragraph): It is well-known that programs are written to use logical device, and the logical device is mapped to the physical devices; and this is evidenced by the popular academic textbook Operating System Concepts (page 11's last 3 lines). Hence, Judd's practice does involve both logical level and physical level.

17.   In response to Applicant's argument that Judd does not disclose or suggest the receiving means and communicating means (Remark, page 14's paragraph 1): Judd discloses the host issues a request to the controller A, and controller A determines that resource is controlled by the controller B, and then forwards the request to controller B (column 4, paragraph 3); hence, Judd does disclose "receiving on said first controller a request to reserve said logical I/O device; and communicating by means of said bus from said first to said second controller a reservation request for said logical I/O device for execution by said second controller, in response to said receiving".

18.   In response to Applicant's argument on the impermissible hindsight (Remark, page 14's paragraph 5, page 27's paragraph 7): In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

19.   In response to Applicant's argument that Judd teaches away from any suggestion

(Remark, page 16's paragraph 1): Judd does not teach away any suggestion, Applicant fails to

explain clearly why Judd is teaching away. The mere allegation is not sufficient.

20.   In response to Applicant's argument that Judd does not disclose claim 3's limitation

"determining whether said logical device is already reserved within said second controller"

(Remark, page 16's last paragraph and page 17's paragraph 1): Judd does disclose this limitation

in column 4's paragraph 3, wherein the controller A determines the resource is controlled by the

controller B.

21.   In response to Applicant's argument that Judd does not disclose or suggest the aborting

feature (Remark, page 27's paragraph 3): Judd does disclose such feature. On Judd's column

8's lines 59-64, Judd discloses the aborting when reservation fails.

22.   In response to Applicant's argument that Judd's fail-over teaches away from the

invention (Remark, page 28's paragraph 2): Judd does discloses the aborting feature that

Applicant argued, see the response stated above.

Conclusion

23.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

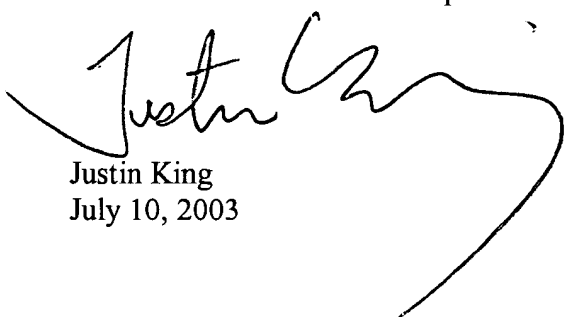MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Justin I. King whose telephone number is 703-305-4571. The

examiner can normally be reached on Monday through Friday, 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mark Rinehart can be reached on 703-308-3110. The fax phone numbers for the

organization where this application or proceeding is assigned are 703-746-7239 for regular

communications and 703-746-7239 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is 703-306-5631.

Justin King
July 10, 2003

GOPAL C. RAY
PRIMARY EXAMINER
GROUP 2800